

ATTACHMENT A
ADDITIONAL WORK ITEMS
COUNTY FARM ROAD UNDERPASS

TASK DESCRIPTION

A. Additional Studies

1. Topographic Survey and Right-of-Way Tasks

The following additional services have been performed to complete the survey for the County Farm Road project:

- a) The limits of the topographic survey have been modified since the project originated. The limits of topographic survey were originally 20 meters west and 55 meters east of the existing centerline of County Farm Road. The topographic survey was actually surveyed for 35 meters on the west and 70 meters east of the existing centerline of County Farm Road. The additional survey was necessary to meet the requirements of the expanded project cross section.
- b) The original scope extended the survey on cross streets to 60 meters beyond the limits of the survey along County Farm Road, survey was performed approximately 120 meters beyond the County Farm Road survey limit.
- c) The survey for the west leg of the North Entrance to the County Complex was resurveyed so the topography will reflect the new construction at the entrance.
- d) The cross section survey was extended beyond the south right-of-way line of the Union Pacific Railroad (UPRR). This information was used to determine the toe-of-slope for the extended shoofly embankment and the limits of the berm removal east of County Farm Road.
- e) Retention basin no. 2 was surveyed to determine the potential for additional detention volume in the basin. The bottom elevation of the basin was also surveyed.
- f) The original contract did not include the staking out the mainline, runaround and cross street baselines. The preparation of tie points for all of the PC's, PT's, and PI's is also necessary for inclusion of the contract documents.
- g) The toe of slope for the railroad shoofly was staked out for a meeting to discuss options related to the shoofly embankment.
- h) Additional plats and legal descriptions will be prepared for construction easements necessary to construct the retaining walls on the west end of the shoofly.

- i) The County requested CTE to prepare exhibits and present proposed design alternatives for consideration of the County Board at the January 1997 Board Meeting. The preparation of those plans, staging diagrams and costs estimates were not included in the original scope of services.

2. Geotechnical Investigation and Soil Boring

Additional soil borings are necessary at the following locations to complete the design:

- Pump station and storage pipe – two (2) borings @ 40 foot depth.
- Detention basin no. 4 – one (1) borings @ 30 foot depth.
- Detention basin no. 1 – two (2) borings @ 15 foot depth.
- Retaining wall at the west end of the shoofly – two (2) borings @ 25 foot depth.
- Crib retaining wall – one (1) borings @ 25 foot depth.
- At Sta. 2+264 (CFR) to determine if a sand seam exists between basin no.2 and the underpass – two (2) borings @ 40 foot depth.
- Along shoofly alignment west of County Farm Road – three (3) borings @ 10 foot depth.
- Along shoofly alignment east of County Farm Road – three (3) borings @ 30 foot depth.

See O'Brien and Associates, Inc. proposal dated April 12, 1999 for additional information.

3. Location Drainage (Stormwater) Study/Hydraulics

Modifications to the projects stormwater needs were made to incorporate the detention requirements of the Jewel Road and County Complex Projects into the County Farm Road Project. These modifications included:

- a) Coordination with the consultants for the County Complex and Jewel Road Project. Coordination with Christopher B. Burke Engineering Ltd. to determine CTE's role in the areas overall detention requirements.
- b) Expansion in the existing stormwater modeling area and revisions to the existing stormwater model to include County Complex and Jewel Road Projects.
- c) Revisions to the proposed model to reflect the upstream and downstream condition changes created by the County Complex and Jewel Road Projects.
- d) Modeling of retention basin no. 2 to reflect the need for additional detention volume necessary to meet on the needs of the Jewel Road and County Complex Projects.
- e) Preliminary pump station design for both the deck girder and through girder bridge design was provided. Different roadway profiles and storm sewer outfall elevations were necessary for each design.

- f) Modeling and design of the Jewel Road storm sewer from Harrison Avenue to the outfall at detention basin no. 1.
- g) Revisions to the location drainage study to reflect the modifications made to the project since the original submittal. This would include the submittal of the revised DEC stormwater permit.
- h) Modifications to preliminary sewer alignments, profiles and sizes to accommodate the relocation of the pump station.

4. Alternative Alignment Studies

From August 1996 to January 1997, the team refocused its effort to study alternative alignments in sufficient detail to compare costs with the already completed alternatives. Numerous additional alternatives were studied to determine that the selected alternative provided a balance between the impact to the community, traffic disruption and project costs. This work was performed due to a request from the County. The following items were performed:

- a) Additional meetings with the County were necessary to discuss issues and progress of the study.
- b) Project management and coordination.
- c) CTE studied two additional alignments and profiles than was anticipated during the preliminary phase of the study. A comparison of advantages and disadvantages of each alternate was performed.
- d) Proposed cross sections for the preferred alignment were prepared.
- e) A cost estimate was performed for each alternative.
- f) Exhibits were prepared to present to the County Board and the Division of Transportation.

B. Additional Design Tasks

Additional details and design items were necessary to complete the contract documents. These items included:

1. The roadway runaround will impact the County Complex parking lot west of County Farm Road. CTE designed improvements to the parking lot that will be implemented after the runaround is removed. The improvements will include resurfacing, light pole reinstallation and regrading.
2. The design of a right turn lane at Founder's Park would require changes to the following:
 - Extension of the project limits.
 - Additional storm sewer design.
 - Additional cross-sections and modifications to existing cross-section drawings.

- Additional quantity calculations.
3. The design of a block retaining wall system along County Farm Road at Station 2+540 RT. County Farm Road (lot no. 7). This additional work was necessary to allow the County to purchase additional right-of-way for a single parcel on the east side of County Farm Road. The purchase of this single parcel allowed the elimination of a conventional retaining wall from the project, which was previously designed. A block retaining wall was required at this parcel.
 4. Additional design and detailing for the runaround detour are necessary in the plans. This additional work was made necessary after the runaround detour was coordinated with the UPRR.
 5. Additional specifications for numerous design items that evolved during the preparation of these additional items.
 6. The design of a step wall earth retaining system at the west end of the shoofly to limit the impact to the property south of the UPRR. Additional plan drawings, shoofly cross section modifications, quantity calculations and specifications will be required to complete this design.
 7. The design of a sheet pile wall to limit the impact to the property west of the County property south of the UPRR. Additional plan drawings, shoofly cross section modifications, quantity calculations and specifications will be required to complete this design.
 8. A detour plan is necessary for the closing of County Farm Road during the construction and removal of the runaround detour.

C. Added Complexity

1. The additional work associated with the modifications to the location drainage study including additional storm sewers alignment and profile relocations. These additional relocations required the preparation of separate drainage and utility drawings and sewer profile drawings.
2. Additional soil erosion and sediment control plans are necessary for the staging of the detention basins.
3. Roadway runaround section was detailed in the cross sections to better represent the relative location of the runaround to the proposed improvements.

D. Modifications to Design

Originally, the railroad shoofly was designed to meet Chicago and Northwestern Railway Company (CNW) guidelines. In 1995 the Union Pacific Railroad (UPRR) purchased the CNW, requiring that the project adhere to the UPRR guidelines. This required the redesign of the following items:

1. Shoofly was extended to meet the UPRR guidelines. The guidelines require a greater horizontal distance be provided between reverse curves. Increasing

the length of the shoofly and the number of drawings for the shoofly. The design was 60 percent complete when this modification was identified.

2. The CNW requested that permanent track should be designed for 15 feet track centers. This required modifications to the bridge. The construction limits also increased to include the curves on the east and west ends of the railroad tracks where the generation of the 15 feet track centers will begin.
3. Additional structural work was required to accommodate UPRR requirements and code changes. Unless noted otherwise, the bridges design was 90 percent complete when the need for the changes were realized.
 - Addition of support and access hatches for UPRR signal conduits.
 - Rechecking of calculation for bearings, pier, and abutments due to modifications of code requirements for longitudinal loading. The contract documents were modified to reflect changes in the design.
 - Modifications of design and contract documents to accommodate final UPRR guidelines.
 - When the bridge design was approximately 30 percent complete, the bridge cross section was modified to accommodate 15 feet track centers.

E. Delay in Project Completion

The original project schedule has increased from eighteen months to sixty-two months.

1. As shown in the project time line chart, the project included numerous starts and stops, delays, and periods of backtracking. Due to the extension in the project schedule, CTE found it necessary to add new staff to the project.
2. Due to the extended duration, we experienced escalation in salaries and additional management and administrative time.

The extension in the projects duration caused the average hourly rates for the project to increase over the original contract values. The contract hourly rates were based on 1995 and projected 1996 salaries. The schedule has expanded into 1997, 1998, and 1999 increasing the average hourly rate due to salary adjustments during this time.

Due to the sixty-two month project schedule, additional coordination and administration effort was necessary to maintain the project during active periods.

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R E S O L U T I O N

DTp-038-94

WHEREAS, an agreement has been negotiated in accordance with County Board policy, and

WHEREAS, the Division of Transportation Committee recommends County Board approval for the issuance of the purchase order for engineering services for design of County Farm Road/C&NW RR grade separation (underpass) through May 31, 1997, as explained in the documents hereto attached and made a part hereof;

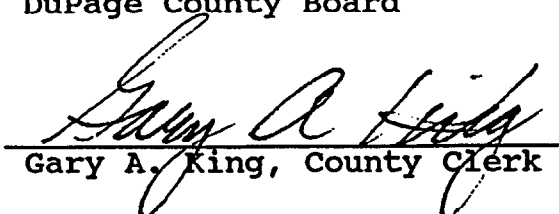
NOW, THEREFORE BE IT RESOLVED, that County Purchase Order #819752 dated October 26, 1994, covering said engineering services for design of County Farm Road/C&NW RR grade separation (underpass) for the Division of Transportation for a contract total amount of \$736,012, be, and it is hereby approved for issuance by the Purchasing Department to Envirodyne Engineers, Incorporated, 168 North Clinton Street, Chicago, Illinois 60661.

BE IT FURTHER RESOLVED, that the County Clerk transmit copies of this resolution to the Finance Department, Auditor, Treasurer, Division of Transportation and to the Purchasing Department.

Enacted and approved this 8th day of November 1994, at Wheaton, Illinois.


Aldo E. Botti, Chairman
DuPage County Board

ATTEST:


Gary A. King, County Clerk

Ayes: 23
Absent: 1



DU PAGE COUNTY, ILLINOIS

421 N. COUNTY FARM ROAD

WHEATON, ILLINOIS 60187

708-682-7527

MAIL ALL INVOICES IN TRIPPLICATE TO THE
SHIP TO ADDRESS BELOW.

TAX EXEMPTION NO: E9997-4551-02

ENVIRODYNE ENGINEERS INC.

ATTN: JAMES POWERS

168 N. CLINTON ST.

CHICAGO

IL 60661

THIS ORDER NUMBER MUST APPEAR ON ALL PACKAGES.
PACKING SLIPS, INVOICES OR B/L PERTAINING TO THIS
ORDER OR SHIPMENT MAY BE SUBJECT TO REFUSAL.

10/25/94

DATE

RELEASE NO.

819752

PURCHASE ORDER CONTRACT RELEASE

SHIP TO

DUPAGE COUNTY

130 N COUNTY FARM RD. BOX 298

WHEATON. IL 60189

DIVISION OF TRANSPORTATION

ACCOUNT NO.

FUND 3 AGENCY 20 DATE DUE 05/31/97

F.O.B.	CASH ACCT	TERMS	VENDOR NO.	SHIP VIA	REQ. NO.
WHEATON	---	NET 30 DYS	06064000	B/W WF	191962

#	ORGAN.	ACTIVITY	OBJECT	QUANTITY	UOP	ITEM NO./DESCRIPTION	PRICE	EXTENSION
01	---	---	3050	1	EACH	***819752 ENGINEERING SERVICES FOR DESIGN OF COUNTY FARM ROAD/C&NW RR GRADE SEPARATION (UNDERPASS) AS DEFINED IN THE ATTACHED SCOPE OF WORK AND SCHEDULE. SEC. 94-00179-05-GS		
			1994 30-203-3050				\$4,000.00	
			1995 10-200-3050				\$160,000.00	
			1995 30-203-3050				\$65,000.00	
			1995 40-225-2002-3050				\$310,000.00	
			1995 30-203-3050				\$197,012.00	

BOARD
REQUIRED

This Purchase Order is subject to the Terms and Conditions on the reverse side.

COMMITTEE APPROVAL

BUYER

TOTAL

CLIFF WILLIAMS

\$736,012.00

DATE

RESOLUTION NO.

DATE

DIRECTOR OF PURCHASING/BUYER

DATE

1. PROJECT UNDERSTANDING AND SCOPE OF WORK

INTRODUCTION

Envirodyne Engineers, Inc. (EEI) proposes to provide professional design services to the DuPage County Division of Transportation for the County Farm Road/C&NW Railroad Grade Separation Project in the Village of Wheaton. The proposed improvements consist of the lowering of County Farm Road and the construction of a railroad bridge to carry C&NW railroad traffic. Proposed improvements extend from Jewell Road on the north to the Entrance Drive to the County office complex on south for an approximate length of 915 meters (3,000 feet). A location map including the specific project location, is contained on the following page.

PROJECT UNDERSTANDING AND SCOPE OF WORK

It is our understanding that this phase of the project consists of the following main items:

- Topographic and Design Survey
- Soil Brings and Geotechnical Investigations
- Preparation of Design Report
- Preparation of Location Drainage Study/Hydraulics Reports
- Preparation of TS&L Drawings
- Preparation of Final Roadway and Structure Plans

Scope of work consists of the following tasks:

- Project management and coordination
- Topographic Survey and R.O.W. Survey
- Soil brings and Geotechnical Investigation
- Railroad bridge type studies
- Pick-up survey
- Preparation of Design Report/Environmental Issues
- Location Drainage Study/Hydraulic Reports
- TS&L Drawings - RR Bridge and Retaining Walls
- Construction staging and maintenance of traffic
- R.O.W. plans, legal descriptions and plats
- Final roadway plans
- Final structure plans - RR bridge and retaining walls